DOI: 10.14260/jemds/2014/2849

ORIGINAL ARTICLE

TWO LEVELS SPONDYLOLISTHESIS: A RARE CASE SERIES

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HOW TO CITE THIS ARTICLE:
Bharath Raju G, Vinod Kumar A. C, I. Suresh, Ravish V. N, Mandeep G, Ravi Shankar. "Two Levels Spondylolisthesis: A Rare Case Series". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 25, June 23; Page: 6979-6992, DOI: 10.14260/jemds/2014/2849

ABSTRACT: INTRODUCTION: The term "Spondylolisthesis" refers to a condition where one of the vertebrae (usually L5) becomes misaligned anteriorly (slips forward) in relation to the vertebra below. This forward slippage is caused by a problem or defect within the pars interarticularis. Occasionally, facet joint and/or posterior neural arch defects may also cause this syndrome as well. We encountered 3 cases of two levels spondylolisthesis, a case series rarely documented. **CASE REPORTS:** Patient, Kanthaiah 5yrs male, presented with low backache radiating to left lower limb associated with tingling and numbness sensations. X-rays showed spondylolisthesis L4-L5-S1. MRI showed left sided nerve root compression and myelogram showed cut off at L4-L5, L5-S1. Patient had left sided deficits and so the patient was operated and post operatively improved clinically and was followed up regularly. Another patient Muniyamma, 68 yrs female, presented to our hospital 10 yrs back with two levels spondylolisthesis. In a outside hospital, posterior spinal decompression and interbody fusion was done without stabilization at only one level (L4-L5). On subsequent follow up the other level (L5-S1) worsened. Right now patient is not willing for any surgical intervention so we are managing with conservative treatment. Our third patient, Geetha 42yrs female, presented to our hospital with two levels spondylolisthesis, grade 2 at L3-L4 and L4-L5 levels. Patient was operated and has improved clinically. **CONCLUSION:** Incidence of spondylolisthesis is 3% to 6%. Multilevel spondylolisthesis is rarely documented in literature. This case series is being reported because of the rare documentation.

KEYWORDS: Spondylolisthesis, spondylolysis, spondyloptosis.

INTRODUCTION: The term "Spondylolisthesis" refers to a condition where one of the vertebrae (usually L5) becomes misaligned anteriorly (slips forward) in relation to the vertebra below. This forward slippage is caused by a problem or defect within the pars interarticularis. Occasionally, facet joint and/or posterior neural arch defects may also cause this syndrome as well. The forward slippage does NOT always occur. This non-slipped pars defect is called a "Spondylolysis" and is almost always a precursor to the actual forward slippage. The term spondylolisthesis was used by Herbiniaux, a Belgian obstetrician, noted a bone prominence in front of the sacrum that caused problems in delivery. He generally is credited with having first described spondylolisthesis. By Kilian in 1854 and is derived from the Greek spondylos, meaning "vertebra," and olisthenein, meaning "to slip." We describe case reports of spondylolisthesis involving L4-L5 and L5-S1 levels a rare documentation.

CASE HISTORY:

CASE 1: Patient name Kanthaiah 51yrs, male farmer by occupation presented with low back ache radiating to left lower limb for 1 month. It was associated with tingling and numbness sensations. On examination classical signs of spondylolisthesis were presented. Step was seen over LS spine. Heart

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shaped pelvis was presented. Decreased distance was seen between subcostal margins and iliac crests. Left sided EHL, EDL.FHL, FDL deficits were present and powers were 2/5. X-ray showed spondylolisthesis GRADE 2 at L4-L5 level and GRADE 4 at L5-S1 level. MRI showed left sided nerve root compression with myelogram showing cut off at L4-L5 and L5-S1 levels. We operated the case with posterior spinal decompression with interbody fusion with bone grafting and stabilization with Mass Miami instrumentation. The post operative period was uneventful. The radicular pain subsided. The post operative check x-ray was satisfactory. The patient was followed up regularly and on follow up his motor power was elicited to have improved. FHL and FDL were found to be 5/5. EHL and EDL were found to be 3/5. The patient could sit without support; walk, squat and sit crossed legged. Bony fusion between vertebral bodies were seen at L4-L5 and L5-S1 levels in follow up x-rays with no further progression of disease and implant insitu.

CASE 2: Patient name Muniyamma 68 yrs female,housewife by occupation, 10 years back presented to our hospital with low back ache radiating to both the lower limbs with stenotic symptoms. On examination classical signs of spondylolisthesis were present. Bilateral EHL, EDL, FHL, FDL deficits were elicited. The x-rays showed spondylolisthesis L4-L5 and L5-S1. MRI showed bilateral nerve roots compression. The patient was operated in a outside hospital with posterior spinal decompression and interbody fusion without stabilization at one level (L4-L5) only. The post-operative period was uneventful. The patient improved clinically. The patient was followed up regularly and on follow up patient was found to have deteriorated clinically and the spondylolisthesis had progressed at other level (L5-S1). Patient is not willing for any surgical intervention as of now, so we are managing conservatively.

CASE 3: Patient named Geetha 42yrs female, housewife by occupation, presented to us with low backache radiating to both the lower limbs with stenotic symptoms for last 3yrs. On examination, the classical signs of spondylolisthesis were present. No neurological deficits were elicited. X-ray showed grade 2 spondylolisthesis L3-L4 and L4-L5. MRI showed bilateral nerve roots compression with myelogram showing cut off at L3-L4 and L4-L5 levels. She was treated at outside hospitals for 3 yrs with conservative measures but there was no clinical improvement. Now to us she insisted on surgery, so we operated the case with posterior spinal decompression with interbody fusion with bone grafting and stabilization with Moss Miami instrumentation. The post operative period was uneventful. The radicular pain subsided. The post-operative check x-ray was satisfactory. On recent follow up, her clinical symptoms have improved with follow up x-ray showing no further progression of the disease and implant insitu.

DISCUSSION: Spondylolysis is now specifically used to describe a bony defect in the pars interarticularis, the portion of the neural arch just caudal to the confluence of the pedicle and the superior articular process and at the most cephalad part of the lamina and inferior articular process. Spondylolisthesis can be present with or without spondylolysis. Spondyloptosis has similar origins, with the same root appended to the Greek word ptosis (falling). In modern usage, this refers to the most severe form of spondylolisthesis, when the body of L-5 has slipped into the pelvis and is positioned directly anterior to the sacrum.

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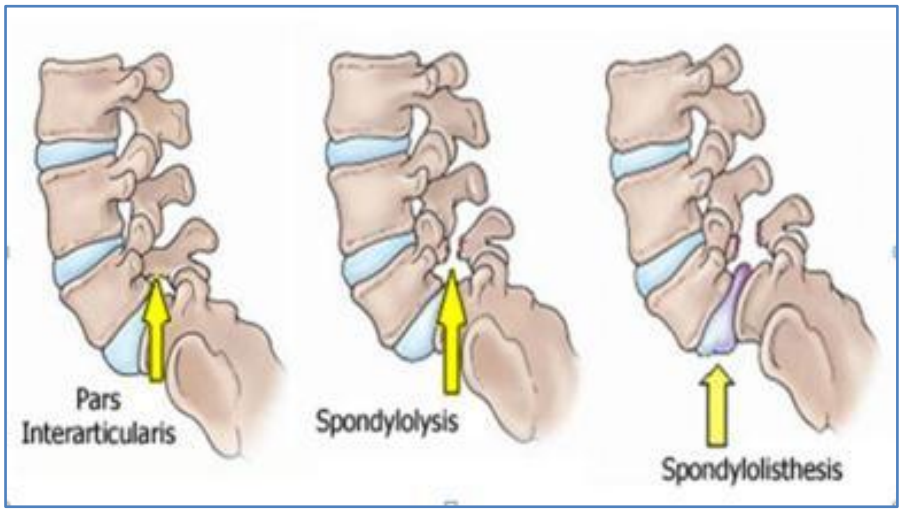
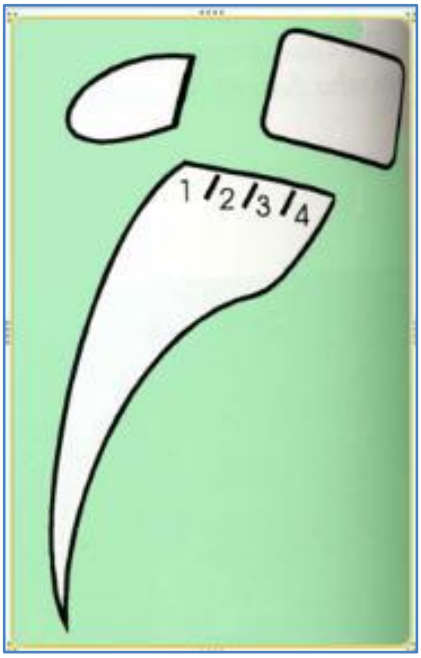


CLASSIFICATION:

1. Dysplastic spondylolisthesis
2. Isthmic spondylolisthesis
3. Degenerative spondylolisthesis
4. Traumatic spondylolisthesis
5. Pathological spondylolisthesis
6. Iatrogenic spondylolisthesis

MEYERDING'S GRADING:



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- Grade I (0–25% subluxation),
- Grade II (25–50% subluxation),
- Grade III (50–75% subluxation) and
- Grade IV (75% subluxation)

Complete or 100% spondyloptosis.

- Indications for surgery:
- The surgical indications are different for children and adolescents than for adults. For adults: the indications for surgery are as follows:
  - Documented progression of a slip beyond 25%
  - Presentation with a high grade slip >50%
  - Intractable pain or neurologic symptoms
  - Progressive postural deformity or gait abnormality
- For adults, the usual surgical indication is persistent back pain and neurologic or radicular symptoms unresponsive to non-operative management. Sciatica is more responsive than back pain to surgery. Patients with more severe symptoms will generally experience greater benefit from surgery than those with milder symptoms.

CONCLUSION: We present three cases of two levels spondylolisthesis. To our knowledge it is a rare presentation. Incidence of spondylolisthesis is 3% to 6% in general population. The multilevel spondylolisthesis is a rare presentation and rarely documented in literature. In 1980 j. cassidy dc reported a case of progressive two levels spondylolisthesis in a 64 year farmer who gave up farming due to his symptoms.[1] Dr.Lee j. hazen published a case report of multiple levels spondylolisthesis and stenosis.[2] Ravichandran g. in 1980 published a case report of L3-L4 and L4-L5 spondylolisthesis in a 43 year young man managed conservatively.[3] In 2001 Chang jh, lee ch, wu ss, published a case report of 6 cases who all were soldiers and had multiple levels spodylolisthesis of the lumbar spine.[4] In 1984 Mathiesen f., simper lb, seerup a. published a case report of multiple spondyloses and spondylolisthesis in a young male.[5]

CLINICAL MESSAGE: Multilevel spondylolisthesis, a rare presentation hardly documented in literature when operated with posterior spinal decompression with interbody fusion with bone grafting and stabilization with Moss Miami instrumentation gives clinical relief to the patient and prevents further progression of the deformity.

REFERENCES:

1. J david Cassidy dc, fccs(c): progressive two levels isthmic spondylolisthesis. The journal of the cca/volume24 no.2/ june 1980.
2. Lee j.hazen cox ® technic case report #83 (sent 5/10) www.coxtechnic.com/casereportsfree.html
3. Ravichandran g. multiple lumbar spondyloses. Spine. 1980; 5(6): 552-7.
4. Chang jh, lee ch, wu ss, et al. management of multiple level spondylolysis of the lumbar spine in young males: a report of six cases. J formos med assoc. 2001; 100: 497-502.
5. Mathiesen f, simper lb, seerup a. multiple spondylolyses and spondylolistheses. Brit j radiol. 1984; 57: 338-40.

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X-RAYS, MRI AND CLINICAL PHOTOGRAPHS:

CASE1: PRE-OPERATIVE CLINICAL PHOTOGRAPH:

PRE-OPERATIVE X-RAYS:

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MRI AND MYELOGRAM:

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POST-OPERATIVE X-RAYS:

RECENT:

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POST-OPERATIVE CLINICAL PHOTOGRAPHS:

DORSIFLEXION:

PLANTAR FLEXION:

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CASE 2:

PRE-OPERATIVE X-RAY:

MRI:

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POSTOP CLINICAL PHOTOGRAPH:

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POST-OPERATIVE RECENT X-RAY:

CASE 3:

PRE-OPERATIVE X-RAY:

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RECENT POST-OPERATIVE X-RAY:

MRI OF THE PATIENT:

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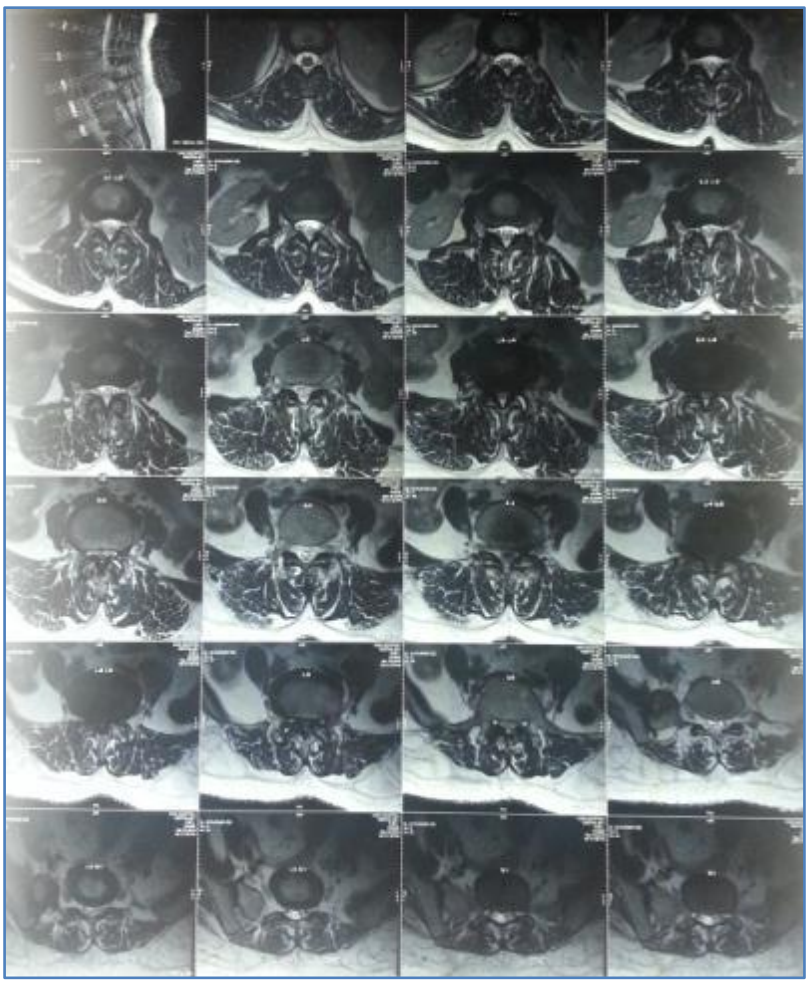

MYELOGRAM:

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Date of Submission: 05/06/2014.
Date of Peer Review: 06/06/2014.
Date of Acceptance: 10/06/2014.
Date of Publishing: 21/06/2014.